

Dining out with food allergies

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A recent article from the United States described the “Characteristics of Food Allergic Reactions in United States Restaurants” published in the Journal of Allergy and Clinical Immunology: In Practice.¹ This article highlighted the perils of dining out for food-allergic individuals and advocates the formation of mitigation strategies that can ultimately reduce the occurrence of food-allergic reactions while dining out.

The authors collected data on reactions to food from 2,822 individuals in the Food Allergy Research & Education (FARE) registry via an online voluntary platform over a 2-year period. It was found that dining out was the second most common setting for these reported allergic reactions (n = 597, 21% overall, 13% and 31% in children and adults, respectively), while the most common location was one's home (n = 1231, 44%) for both children and adults. In the paediatric group, cafes (15%), fast food restaurants (10%), ice cream parlours (7%), and Asian restaurants (7%) were the most frequently identified food-serving establishments where allergic reactions occurred. Surprisingly, reactions in children that occurred while dining out was more than double the number of reactions that occur in school (6%) – the place where they actually spent most of the time. Almost 1 in 4 of the reactions were severe enough that required adrenaline use (28%), and 2.4% of cases did not seek medical assistance after using their epinephrine autoinjectors. The top food elicitor that led to 1 to 2 doses of adrenaline use in restaurant establishments was tree nut, followed by peanut and milk. Overall, 1.8% food-allergic individuals were admitted to the ICU, and of the 3 children who required ICU care, 2 reported milk as the culprit allergen and 1 reported egg. It was evident that allergic reactions occurred despite respondents informing restaurant staff of their food allergy in more than half of the cases (53.9%), while only a small number of menus displayed the ingredients list (5.0%), allergens (9.2%), and/or a precautionary statement (3.5%).

Recall bias was the main limitation of this study, since all allergic reactions were self- or parent-reported on a voluntary basis. As we enter the digital era, online food delivery became a trend. It was noteworthy that the

registry did not provide takeaway or delivery items from a restaurant as an option for the location of an allergic reaction. It was postulated that delivered food items from restaurants were likely to be the trigger of significant food-allergic events occurring at home, thus the number of food-allergic events at restaurant would be under-estimated.

Dining out and spending quality-time with family and friends are supposed to be enjoyable and fun, but this is often not the case for patients suffering from food allergies. Previous studies have similarly reported a lack of communication between restaurant staff and food-allergic individuals as well as the reliance on visual identification of allergens in a dish.^{2,3,4,5} This study highlighted that at the patient-level, it would be important to counsel food-allergic patients on the importance of carrying their adrenaline autoinjectors at all times as well as to review their anaphylaxis action plans regularly. Food-allergic individuals should be reminded to inform restaurant staff of their food allergy and raise their awareness on hidden allergens. At a societal-level, it would be critical that guidelines for food industry are established to help prevent and manage food-allergic reactions at restaurants. It would be helpful to provide training for restaurant staff, particularly on cross-contact with allergens during preparation and serving. Preferably, servers are encouraged to proactively inquire whether or not any individual at the table has any dietary restrictions, and provide lists of ingredients or the menu items should disclose the top allergens.

In the table below, we would like to highlight some of the most common hidden allergens in dishes found in our local community. This would serve as an important educational material for food-allergic individuals and families, allergists and health care professionals as well as restaurant industry.

This article reminds us that food-allergic reactions in restaurants are common and often severe. A structured educational program on food allergy to increase the awareness and preparedness for allergic reactions at both patient and societal levels are essential.

References

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Table 1: Hidden allergens in local restaurants

Allergen	Common hidden food sources
<i>Seafood</i> (Fish & Shellfish)	<ul style="list-style-type: none"> - Chinese seafood restaurants & seafood themed restaurants (e.g., Japanese sashimi, Western style fish & chips) - Italian or Greek dishes such as antipasto, anchovies used as pizza, pasta or salad toppings - Seafood contained in mixed dishes (e.g., Yangzhou fried rice 揚州炒飯, Singapore style rice noodles 星洲炒米) - Dishes that require battering (e.g., vegetables tempura, porkchop cutlet, deep-fried chicken wings) due to risk of sharing of deep-frying utensils and reusing of the same container of oil to cook seafood items (e.g., shrimp tempura, fish fingers respectively) - Dishes that include minced meat (e.g., fish/meat balls, crab sticks, shrimp or fish skin dumplings, minced fish siu mai, stuffed vegetables – such as peppers, eggplant & tofu 煎釀三寶) where the name of the dish cannot disclose the ingredients inside - Soups and soup bases used in noodle dishes that may be brewed with seafood (e.g., Japanese style udon noodle soup in bonito broth, miso soup; Cantonese style wonton noodles or rice noodles in fish stock; Thai style Tom Yum soups and Laksa soups) - Condiments containing seafood (e.g., fish sauce, Worcestershire sauce, bonito soy sauce, Sacha sauce) - Chinese dishes and condiments that contain dried seafood (e.g., raddish cakes, dim sum fillings, XO sauce) - Sweets or desserts that may contain fish based gelatin unless specified “vegan” (e.g., marshmallow, no-bake mousse cakes or cheese cakes)
<i>Egg</i>	<ul style="list-style-type: none"> - Italian restaurants where many food items can contain sources of egg (e.g., handmade pasta, carbonara, tiramisu) - Chinese dim sums containing egg (e.g., Malay sponge cake, egg custard bun, fried Chinese pancake, fried rice or noodles, faux shark fin soup, siu mai) - Dishes that require battering (e.g., tempura, porkchop cutlet, fish fingers, croquettes etc.) as most deep fry batters contain eggs - Dishes that include minced meat (e.g., burger patties, meat balls, steamed pork patties, fillings in dumplings) where the mixture may use eggs as a binding agent - Other common savoury items often containing eggs (e.g., egg noodles, fritters, quiches, frittatas, Japanese style pancakes, takoyaki) - Sweets or desserts that require eggs or whipped egg whites as an ingredient unless specified “vegan” (e.g., cakes, pudding, pancakes, crepes, ice cream, macarons, pavlovas, souffles) - Enquire at point of purchase of any bakery items (e.g., sweet or savoury pies, pastries, breads) that may include egg or uses egg as a glaze - Condiments that may contain egg as an ingredient (e.g., mayonnaise, Hollandaise sauce, custard) - Some cocktails may contain raw egg (e.g., eggnog, flip)

<i>Peanuts or Tree nuts</i>	<ul style="list-style-type: none"> - South-east Asian or Indian style cuisine where majority of the dishes are vegetarian where they may use grinded peanuts in sauces (e.g., in satay, curries), or sprinkle crushed peanuts on top of dishes for crunchy texture (e.g., Vietnamese style mixed vermicelli noodles, rice paper rolls) - Chinese restaurants where peanuts are being served as an appetiser, or dishes that may contain peanuts (e.g., in chicken feet soups, stir-fry sticky rice, dan dan noodles) - A lot of traditional Chinese or Cantonese desserts also contain peanuts such as in stuffed glutinous rice balls in ginger syrup broth, glutinous rice balls coated in peanuts & sesame seeds, candied roasted peanut clusters, Hong Kong style French toast) - Western style desserts or health food snacks may also contain traces of peanuts or peanut butter (e.g., praline, nougat, tart bases in vegan desserts, granola bars) - Peanut containing sweets (e.g., peanut coated chocolates, peanut butter cups) - Check with restaurants or bakeries if they use peanut oil in cooking and/or baked goods
<i>Wheat</i>	<ul style="list-style-type: none"> - Dishes containing wheat flour or wheat starch - Chinese style dim sums such as steamed buns, Malay sponge cake, rice rolls, raddish cakes, red bean pudding, siu mai - Wheat containing noodles (e.g., pasta, udon, ramen, egg noodles) - Wheat containing condiments unless specified "gluten-free" (e.g., soy sauce, oyster sauce, chilli sauce, sesame sauce)
<i>Soy</i>	<ul style="list-style-type: none"> - Vegetarian or vegan meat substitutes - Dishes containing soy sauce (e.g., Chinese marinated egg and beef brisket) - Fermented soy or bean products/ condiments (e.g., Japanese miso, Korean Gochujang chilli paste or soybean paste, black bean sauce, char chiu sauce, chilli bean sauce) or dishes containing these sauces (e.g., black bean pork ribs, spicy eggplant with minced pork) - Tofu skin rolls

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